

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

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PCT

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

B18062-006210

Date of mailing (day/month/year) 05 JUL 2005

Applicant's or agent's file reference

FOR FURTHER ACTION

See paragraph 2 below

18062-62-1PC

10/5/05

International application No.

International filing date (day/month/year)

Priority date (day/month/year)

PCT/US04/11297

12 April 2004 (12.04.2004)

11 April 2003 (11.04.2003)

International Patent Classification (IPC) or both national classification and IPC

IPC(7): C07D 487/04 and US Cl.: 544/280; 514/265.1

Applicant

THE REAGENTS OF THE UNIVERSITY OF CALIFORNIA

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☒ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☒ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☒ Box No. VIII Certain observations on the international application

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/ US

Mail Stop PCT, Attn: ISA/US
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

Facsimile No. (703) 305-3230

Authorized officer

Thomas C. McKenzie, Ph.D.

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Form PCT/ISA/237 (cover sheet) (January 2004)

resp to written opinion (optional)
DOCKETED BY

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.

PCT/US04/11297

Box No. I Basis of this opinion

1. With regard to the language, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ This opinion has been established on the basis of a translation from the original language into the following language _____, which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).

2. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:

a. type of material

☐ a sequence listing

☐ table(s) related to the sequence listing

b. format of material

☐ in written format

☐ in computer readable form

c. time of filing/furnishing

☐ contained in international application as filed.

☐ filed together with the international application in computer readable form.

☐ furnished subsequently to this Authority for the purposes of search.

3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

4. Additional comments:

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Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

1. The questions whether the claimed invention appears to be novel, to involve an inventive step (to be non-obvious), or to be industrially applicable have not been examined in respect of:

☐ the entire international application

☒ claims Nos. 18,19 and 61-63

because:

☐ the said international application, or the said claim Nos. _____ relate to the following subject matter which does not require an international preliminary examination (*specify*):

☒ the description, claims or drawings (*indicate particular elements below*) or said claims Nos. 18,19 and 61-63 are so unclear that no meaningful opinion could be formed (*specify*):

These claims are improper multiple dependant claims under PCT Rule 6.4(a).

☐ the claims, or said claims Nos. _____ are so inadequately supported by the description that no meaningful opinion could be formed.

☐ no international search report has been established for said claims Nos. _____

☐ the nucleotide and/or amino acid sequence listing does not comply with the standard provided for in Annex C of the Administrative Instructions in that:

the written form

☐

has not been furnished

☐

does not comply with the standard

the computer readable form

☐

has not been furnished

☐

does not comply with the standard

☐ the tables related to the nucleotide and/or amino acid sequence listing, if in computer readable form only, do not comply with the technical requirements provided for in Annex C-*bis* of the Administrative Instructions.

☐ See Supplemental Box for further details.

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Box No. IV Lack of unity of invention

1. ☒ In response to the invitation (Form PCT/ISA/206) to pay additional fees the applicant has:
- ☐ paid additional fees
- ☐ paid additional fees under protest
- ☒ not paid additional fees
2. ☐ This Authority found that the requirement of unity of invention is not complied with and chose not to invite the applicant to pay additional fees.
3. This Authority considers that the requirement of unity of invention in accordance with Rule 13.1, 13.2 and 13.3 is
- ☐ complied with
- ☒ not complied with for the following reasons:
- See the lack of unity section of the International Search Report (Form PCT/ISA/210)

4. Consequently, this opinion has been established in respect of the following parts of the international application:
- ☐ all parts.
- ☒ the parts relating to claims Nos. 1-17, 20-25, 48 and 49

WRITTEN OPINION OF THE
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Box No. V Reasoned statement under Rule 43 bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims <u>12-17, 20-25, 48, and 49</u>	YES
	Claims <u>1-11</u>	NO
Inventive step (IS)	Claims <u>12-17, 20-25, 48, and 49</u>	YES
	Claims <u>1-11</u>	NO
Industrial applicability (IA)	Claims <u>1-17, 20-25, 48, and 49</u>	YES
	Claims <u>NONE</u>	NO

2. Citations and explanations:

Claims 1-4 and 6-11 lack novelty under PCT Article 33(2) as being anticipated by BURCHAT (Bioorganic & Medicinal Chemistry Letters) compounds 5, 10, and 11, page 2172 fit formula (I) with R1 = NH₂, R2 = 4-methoxyphenyl, R3 = E = CN, CO₂H, or CONH₂, R4 = cyclopentyl, and R5 = H.

Claims 1-4 and 6-11 lack an inventive step under PCT Article 33(3) as being obvious over BURCHAT (Bioorganic & Medicinal Chemistry Letters). For reasons cited above.

Claims 1-3 and 5 lack novelty under PCT Article 33(2) as being anticipated by CHENON (Journal of the American Chemical Society). Compound IV, page 4628 fits formula (I) with R1 = NH₂, R2 = R3 = E = R5 = H, R4 = methyl.

Claims 1-3 and 5 lack an inventive step under PCT Article 33(3) as being obvious over CHENON (Journal of the American Chemical Society). For reasons cited above.

Claims 12-17, 20-25, 48, and 49 meet the criteria set out in PCT Article 33(2)-(3), because the prior art does not teach or fairly suggest the compounds and uses of these claims.

Claims 1-17, 20-25, 48, and 49 meet the criteria set out in PCT Article 33(4), and thus have industrial applicability because the subject matter claimed can be made or used in industry.

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Box No. VIII Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the questions whether the claims are fully supported by the description, are made:

Claims 1, 2, 48, and 49 are objected to under PCT Rule 66.2(a)(v) as lacking clarity under PCT Article 6 because claim 1 is indefinite for the following reason(s): the structural terms "electrophilic substituent that is capable of forming a covalent bond", "electrophilic group", and "polar group" are not defined in the specification and are too functional.

Claims 3-17, 20, 21, and 25 are objected to under PCT Rule 66.2(a)(v) as lacking clarity under PCT Article 6 because claim 3 is indefinite for the following reason(s): the structural term "electrophilic group capable of forming a covalent bond", "electrophilic group" is not defined in the specification is too functional. The open language comprises leaves unknown what else is in the molecule.